Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Loral Cyberstar, Inc.	)	File No.: 113-SAT-MP-96
	)	IBFS File: SAT-MOD-19960510-00068
Application for Authority to Modify	)	
Technical Design for Satellite System	)	

ORDER AND AUTHORIZATION

Adopted: April 12, 2002 **Released: April 15, 2002**

By the Chief, Satellite Division, International Bureau:

I. INTRODUCTION

1. With this *Order and Authorization*, we authorize Loral Cyberstar, Inc. (Loral) to incorporate two new beams into the design of its Orion F2 geostationary-satellite orbit (GSO) satellite to be located at 47° W.L. These two beams will allow Loral to optimize the use of its authorized spectrum to provide service to Mexico, Central America, the Caribbean region, and South America, in addition to the Atlantic Ocean region originally proposed.

II. BACKGROUND

2. Loral, through its predecessor in interest, Orion Satellite Corporation (Orion),[1] is authorized to construct, launch, and operate a Ku-band satellite at the 47° W.L. orbit location, using eight fixed beams covering North America, Western Europe and portions of Africa.[2] Loral's planned satellite, Orion F2, is under construction.[3] In this application, Orion (now Loral) states that it has expanded its

[1] Orion merged with Loral's corporate parent, Loral Space & Communication Ltd., in 1998. *See Loral Space & Communication Ltd. and Orion Network Systems, Inc., et al.*, Order and Authorization, 13 FCC Rcd 4592 (Int'l Bur. 1998).

[2] *See Orion Satellite Corporation*, Memorandum Opinion, Order and Authorization, 5 FCC Rcd 4937 (1990) *and* Order, 6 FCC Rcd 4201 (1991) (*Orion 47° W.L. Ku-band License*). As used here, the term "Ku-band" refers to the Earth-to-space (uplink) frequencies at 14.0-14.5 GHz and the corresponding space-to-Earth (downlink) frequencies at 11.7-12.2 GHz. As a result of corporate restructuring, the *Orion 47° W.L. Ku-band License* is currently held by Loral CyberStar, Inc. *See* Letters from Jennifer D. McCarthy, Counsel for Loral CyberStar, Inc. to Magalie Roman Salas, Secretary FCC (January 4, 2000) (confirming consolidation of companies into Loral Orion Services, Inc. and notifying the Commission that Loral Orion Services, Inc. has assumed the name Loral CyberStar, Inc.).

[3] *See* Loral Space & Communications Ltd. Annual Status Report for the year ending May 31, 2001, redacted version at 2-3 (July 2, 2001). In *Loral Orion Services, Inc.*, Order and Authorization, 14 FCC Rcd 17665 (Int'l Bur. 1999), the Orion 2 satellite (now Telstar 12) was inadvertently referred to as Orion F2.

business plan to include regions outside the areas of coverage it proposed in its original application.[4] Loral maintains that its proposed satellite design modification would enable it to provide service to Mexico, Central America, the Caribbean region, and South America, without requiring renegotiation of its coordination agreements for its European and North American coverage.[5] Specifically, the proposed South America North (SAN) beam will cover Mexico, Central America, the Caribbean region, and the northern portions of South America. The proposed South America South (SAS) beam will cover the southern portions of South America.[6] Loral states that the SAN and SAS beams will include uplink frequencies in the 13.75-14.0 GHz band.[7] Loral's application is unopposed.

III. DISCUSSION

3. Given constantly evolving satellite technology and the several year period required to construct a satellite, we often receive from licensees requests to modify the technical design of satellites that they are constructing. We generally allow licensees to make the proposed modifications, provided the modifications are consistent with Commission policies and do not present any significant interference problems.[8] We find Loral's proposed modification to be in compliance with these policies.

4. The *DISCO I* proceeding removed the distinction between domestic fixed-satellites and international separate system satellites.[9] Therefore, all U.S.-licensed satellites may provide any mix of domestic and international services the licensee wishes to provide, subject to approval from the foreign country. Further, international coordination, in accordance with International Telecommunication Union (ITU) Radio Regulations, must be completed before a licensee may begin to provide service to a new geographic area.[10]

5. In general, Loral is free to utilize its authorized frequencies in new geographic areas without further action on our part, assuming ITU coordination is complete and Loral has received approval from the foreign administration. However, Loral wishes to operate in the 13.75-14.0 GHz band, which is not among Loral's currently authorized frequencies.[11] The 13.75-14.0 GHz band has been allocated domestically and internationally to the FSS, subject to restrictions embodied in certain footnotes to the domestic and international tables of frequency allocations. Because the 13.75-14.0 GHz band is shared on a primary basis with Government radiolocation and with the forward space-to-space and space-to-Earth links of the National Aeronautics & Space Administration (NASA) Tracking and Data Relay

[4] Application for Modification of Orion Atlantic's International Communications Satellite System at 47° W.L., File No. 113-SAT-MP-96, IBFS File No. SAT-MOD-19960510-00068 (May 6, 1996) ("Modification Application"). *See also* Public Notice, Report No. SPB-48 (rel. May 30, 1996).

[5] Modification Application at 2.

[6] *Id.*

[7] *Id.*

[8] *Loral Space & Communications Ltd.*, Order and Authorization, 15 FCC Rcd 6868, 6869 ¶ 4 (Sat. & Radiocomm. Div., Int'l Bur. 1999); *see also id.* n.5 (citing precedent).

[9] *See Amendment to the Commission's Regulatory Policies Governing Domestic Fixed Satellites and Separate International Satellite Systems*, IB Docket No. 95-41, Report and Order, 11 FCC Rcd 2429 (1996) (*DISCO I*).

[10] *Id.* at 2430-34.

[11] *See supra* footnote 2.

Satellite (TDRS) System in the space research service, earth stations in the United States and its possessions (US&P) operating with the Orion F2 satellite will require coordination through the National Telecommunications and Information Administration (NTIA) Interdepartment Radio Advisory Committee's (IRAC) Frequency Assignment Subcommittee (FAS).[12] In this regard, we have received a letter from the NTIA requesting that we identify these requirements in any grant of authority to operate a satellite in the 13.75-14.0 GHz band.[13]

6. Domestically, footnotes US337, US356, and US357 are applicable. Footnote US337 to the U.S. Table of Frequency Allocations was specifically adopted because TDRS operations in this band support manned spaceflight.[14] Footnotes US356 and US357 place certain restrictions on FSS operations.[15] Internationally, footnotes S5.502 and S5.503 to the International Telecommunication Union (ITU) Radio Regulations also place certain restrictions on FSS operations.[16] As US356 and US357 have been adopted domestically, the parallel footnotes in the ITU Radio Regulations (*i.e.*, footnotes S5.502 and S5.503) have been removed from the U.S. Table of Frequency Allocations.[17] The fundamental difference between the U.S. and international footnotes is that international footnote S5.503 places e.i.r.p. density restrictions for protection of data relay services in six megahertz of bandwidth (13.772-13.778 MHz), whereas U.S. footnote US357 extends to ten megahertz (13.77-13.78 MHz) the bandwidth where these restrictions apply. We require that earth stations in the US&P operate in accordance with U.S. footnotes US356 and US357. For non-US&P earth stations accessing the Orion F2 satellite, we require operation to be consistent with international footnotes S5.502 and S5.503. We further require that non-US&P operation with the Orion F2 satellite in the four additional megahertz with e.i.r.p. density restrictions under the U.S. footnote to be coordinated with the NASA TDRS system. In the absence of a mutually acceptable coordination agreement with the NASA TDRS system forward space-to-space link within the additional four megahertz highlighted above, the operation of Orion F2 outside the US&P in the entire 13.77-13.78 MHz band will be subject to U.S. footnote US357.

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[12] *See Amendment of Parts 2, 25, and 90 of the Commission's Rules to Allocate the 13.75-14.0 GHz Band to the Fixed-Satellite Service,* ET Docket No. 96-20, Report and Order, 11 FCC Rcd 11951, 11960-61 ¶ 20 (1996).

[13] *See* Letter from William Hatch, Acting Associate Administrator, Office of Spectrum Management, NTIA, to Roderick Porter, Acting Chief, International Bureau, FCC (May 11, 1999).

[14] Footnote US337 requires that earth stations operating in the 13.75-13.8 GHz band be coordinated through the NTIA IRAC's FAS to minimize interference to the forward space-to-space link of the NASA TDRS System. 47 C.F.R. § 2.106 US337.

[15] Footnote US356 places a restriction minimum antenna size of 4.5 meters for earth stations operating in the 13.75-14.0 GHz band and indicates a minimum equivalent isotropically radiated power ("e.i.r.p.") that should be used. Footnote US357 limits FSS earth station e.i.r.p. spectral density in the 13.77-13.78 GHz band until those geostationary space stations in the space research service for which advance publication information was received by the ITU prior to 31 January 1992 cease to operate in this band.

[16] Footnote S5.502 to the ITU Radio Regulations places certain restrictions on the minimum e.i.r.p. and minimum antenna size for earth stations operating in the 13.75-14.0 GHz band. Footnote S5.503 limits FSS earth station e.i.r.p. spectral density in the 13.772-13.778 GHz band until those geostationary space stations in the space research service for which advance publication information was received by the ITU prior to 31 January 1992 cease to operate in this band.

[17] *See Amendment of Parts 2 and 25 of the Commission's Rules to Permit Operation of NGSO FSS Systems Co-Frequency with GSO and Terrestrial Systems in the Ku-Band Frequency Range*, ET Docket No. 98-206, First Report and Order and Further Notice of Proposed Rule Making, 16 FCC Rcd 4096, 4154-55 ¶¶ 144-145 (2000).

7. While the dates in ITU Radio Regulation footnote S5.503A have passed,[18] NTIA notes that NASA's Tropical Rainfall Measuring Mission (TRMM) satellite system radar in the band 13.793-13.805 GHz is still operating.[19] Since TRMM is a highly valuable and visible U.S. asset, with a broad range of international users, NTIA has requested cooperation from the Commission and non-Federal Government entities in providing assistance in reducing interference with the TRMM radar.[20] NTIA notes that it desires that FSS earth stations in the 13.793-13.805 GHz frequency band located south of 39° North Latitude and east of 110° West Longitude operate with emission levels below –150 dBW/600 kHz at the TRMM space station receiver. As this is a request and not a requirement, considering the secondary nature of the TRMM operation, we urge, but do not require, operators of earth stations accessing the Orion F2 satellite in the 13.75-14.0 GHz band to cooperate voluntarily with NASA in order to facilitate continued operation of the TRMM satellite. NTIA also notes that none of the other space-based radar operations covered by S5.503A will seek continued cooperation in this respect.

IV. ORDERING CLAUSES

8. Accordingly, IT IS ORDERED that the Application for Modification of Orion Atlantic's International Communications Satellite System at 47° W.L., File No. 113-SAT-MP-96, IBFS File No. SAT-MOD-19960510-00068, IS GRANTED to the extent indicated herein, and the license granted by Memorandum Opinion, Order and Authorization, 5 FCC Rcd 4937 (1990) *and* Order, 6 FCC Rcd 4201 (1991) IS MODIFIED to permit Loral CyberStar, Inc. to incorporate two new beams into the design of its Orion F2 geostationary-satellite orbit satellite, as set forth in its application and this *Order and Authorization*.

9. IT IS FURTHER ORDERED that Loral CyberStar, Inc. is subject to all terms and conditions in the *Orion 47° W.L. Ku-band License*, 5 FCC Rcd 4937 (1990) *and* 6 FCC Rcd 4201 (1991).

10. IT IS FURTHER ORDERED that Loral CyberStar, Inc. will prepare any necessary submissions to the International Telecommunication Union (ITU) and to affected administrations for the completion of the appropriate coordination and notification of obligations for these space stations in accordance with the ITU Radio Regulations. No protection from interference caused by radio stations authorized by other Administrations is guaranteed unless coordination procedures are timely completed or, with respect to individual administrations, by successfully completing coordination agreements. Any radio station authorization for which coordination has not been completed may be the subject of additional terms and conditions as required to effect coordination of the frequency assignments of other Administrations. 47 C.F.R. § 25.111(b).

11. IT IS FURTHER ORDERED that in the 13.75-14.0 GHz band, all earth stations in the United States and its possessions are required to coordinate through the National Telecommunications

[18] Footnote S5.503A states that: "Until 1 January 2000, stations in the fixed-satellite service shall not cause harmful interference to non-geostationary space stations in the space research and Earth exploration-satellite services. Additionally, when planning earth stations in the fixed-satellite service to be brought into service between 1 January 2000 and 1 January 2001, in order to accommodate the needs of spaceborne precipitation radars operating in the band 13.793-13.805 GHz, advantage should be taken of the consultation process and the information given in Recommendation ITU-R SA.1071."

[19] *See* Letter from Fredrick R. Wentland, Acting Associate Administrator, Office of Spectrum Management, NTIA, to Don Abelson, Chief, International Bureau, FCC (February 28, 2002).

[20] *Id.*

Information Administration Interdepartment Radio Advisory Committee's Frequency Assignment Subcommittee.

12. IT IS FURTHER ORDERED that the operation of the Orion F2 satellite in the 13.75-14.0 GHz band shall be in accordance with footnotes US356 and US357 to 47 C.F.R. § 2.106 in the United States and its possessions, and footnotes S5.502 and, subject to coordination with the Interdepartment Radio Advisory Committee, S5.503 to the ITU Radio Regulations outside of the United States and its possessions. In addition, in the absence of a separate coordination agreement with the forward space-to-space link of the National Aeronautics & Space Administration Tracking and Data Relay Satellite System operating in the 13.75-14.0 GHz frequency band, U.S. footnote US357 will apply to non-United States operation of the Orion F2 satellite in the 13.77-13.78 GHz band.

13. IT IS FURTHER ORDERED that the temporary assignment of any orbital location to Loral CyberStar, Inc. is subject to change by summary order of the Commission on 30 days notice and does not confer any permanent right to use the orbit and spectrum. Neither this authorization nor any right granted by the authorization shall be transferred, assigned, or disposed of in any manner, voluntarily or involuntarily, or by transfer of control of any corporation holding this authorization to any person except upon application to the Commission and upon a finding by the Commission that the public interest, convenience and necessity will be served thereby.

14. IT IS FURTHER ORDERED that Loral Cyberstar, Inc. is obliged to comply with the applicable laws, regulations, rules, and licensing procedures in those countries it proposes to serve.

15. IT IS FURTHER ORDERED that Loral CyberStar, Inc. has 30 days from the date of the release of this *Order and Authorization* to decline this authorization as conditioned. Failure to respond within that period will constitute formal acceptance of the authorization as conditioned.

16. This *Order and Authorization* is issued pursuant to Section 0.261 of the Commission's rules on delegations of authority, 47 C.F.R. § 0.261, and is effective upon release.

FEDERAL COMMUNICATIONS COMMISSION

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